

## Compound Interest and multiple discounts.

Do you get the same price from two discounts or a double discount?

1.  $\$100$        $2 \times 25\%$  discount  
                                 or  
                                  $1 \times 50\%$  discount

The second discount is calculated on the result of the first discount.

2. You invest \$100 in a company that pays out 5% every year for 3 years, compounding annually or another investment that pays 15% on the total at the end of 3 years. Which is a better investment?
3. Keeners: derive an equation for compound interest.
- 4.

$50\%$  is better      ~~50% discount~~

1.50

$$2. 100 \div 4 = 25$$

$$75 \div 4 = 18.75$$

$$25$$

$$+ 18.75$$

$$1843.75$$

$$100\$ \times 955$$

$$\begin{array}{r} 105 \\ \times 1.05 \\ \hline 110.25 \\ \times 1.05 \\ \hline 115.7625 \end{array}$$

$$115.760000$$

$$115.76\$$$

$$115.00\$$$

Homework:  
p161 -162  
Q1-16 all

(Thursday 4.5, Monday Review)

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$$Q1 \quad 100 \times 1.1$$

$\uparrow$   
 $= 10\% \text{ increase}$

$$= 110 \times 1.15 = 126.5$$

$$\begin{array}{r} \underline{100} \\ 26.5\% \text{ increase} \end{array}$$

x 0.15 →

## Block 1-1

### Compound Interest and multiple discounts.

Do you get the same price from two discounts or a double discount?

1. For example, you get 25% and then 25% discount or a 50% discount on a \$100 pair of shoes.

The second discount is calculated on the result of the first discount.

2. You invest \$100 in a company that pays out 5% every year for 3 years, compounding annually or another investment that pays 15% on the total at the end of 3 years. Which is a better investment?
3. Keeners: derive an equation for compound interest.

$$100 \times 0.25 = 25$$

$$100 \times 0.75 = 75$$

$$75 \times 0.25 = 18.75$$

$$75 + 18.75 = 93.75$$

$$75 \times 0.25 = 18.75$$

$= \$43.75$  discount  
less than \$50  
from 50%

$$100 \times 1.05 = 105$$

~~100~~ \$115

$$105 \times 1.05 = 110.25$$

$$110.25 \times 1.05 = 115.76$$

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